

IN THE CLAIMS:

This listing of claims replaces all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method for enhancing recovery by epithelial cells from ischemia by targeting distinct lesions, comprising:

contacting a lesion with a plurality of agents that act by performing an action selected from the group consisting of:

(i) inhibiting internalization of one or more intercellular junctions, E-cadherin, occluding or other membrane proteins;

(ii) promoting reuse of preexisting components by targeting for activation of specific signaling events during short-term ischemia;

(iii) inhibiting degradation of E-cadherin or other key proteins necessary for the maintenance of the polarized epithelial cell phenotype; and

(iv) enhancing the protein folding and assembly capacity in the ER and/or cytosol with agent which upregulate cytoprotective chaperones, wherein the enhancing helps to reconstruct degraded adherens and tight junctions by de novo synthesis and movement of membrane proteins, and alleviation of cellular stress by raising levels of molecular chaperones; and

(v) any combination of (i)-(iv).

2. (Currently Amended) The method according to claim 1, wherein the inhibiting of the internalization requires early intervention with comprises contacting the lesion with drugs or

growth factors that specifically modulate signaling through a mechanism selected from the group consisting of IP₃-sensitive calcium stores, G-proteins, protein kinase C, and other kinases all of which are implicated in the reassembly response during the calcium switch.

3. (Currently Amended) The method according to claim 1, wherein the promoting refers to facilitating the resorting of growth factor receptors to the cell surface through modulation of signaling pathways to enhance thereby enhancing the effectiveness of endogenous and/or exogenous growth factors administered after ischemic insult.

4. (Currently Amended) The method according to claim 1, wherein the inhibiting degradation refers to prevention of proteolytic clipping cleavage of key proteins.

5. (Currently Amended) The method according to claim 1, wherein an agent which upregulate cytoprotective chaperones comprises an inhibitor of proteasomes.

6. (Currently Amended) The method according to claim 1, wherein one of the plurality of agents which upregulate cytoprotective chaperones comprises pretreatment with tunicamycin.

7. (New) The method of claim 1, wherein intracellular membrane proteins are E-cadherin, claudin and/or occludin.

8. (New) The method of claim 1, wherein the plurality of agents includes at least two of the following members selected from the group consisting of a growth factor, a protein kinase C activator, a GTP binding protein activator, a proteasome inhibitor, a caspase inhibitor, an agent that upregulates cytoprotective chaperones, and an agent that modulates stress responses.

9. (New) The method of claim 8, wherein the proteosome inhibitor is MG132 and/or lactocystin.

10. (New) The method of claim 8, wherein the agent that upregulates cytoprotective chaperones is MG132 and/or lactocystin.

11. (New) The method of claim 8, wherein the growth factor is selected from the group consisting of insulin-like growth factor, pleiotrophin, midkine, fibroblast growth factor, epidermal growth factor receptor ligands, melanocyte stimulating hormone, hepatocyte growth factor.

12. (New) The method of claim 8, wherein the protein kinase C activator is a diacylglycerol analog.

13. (New) The method of claim 8, wherein the GTP binding protein activator is selected from the group consisting of a nonhydrolyzable GTP analog, aluminum fluoride, lysophosphatidic acid and phenylphrine.

Applicant : Sanjay Nigam
Serial No. : 09/965,651
Filed : September 25, 2001
Page : 5 of 7

Attorney's Docket No.: 15670-020001 / SD 2001-041-2

14. (New) The method of claim 8, wherein the agent that modulates stress responses is selected from the group consisting of tunicamycin and geldanomycin.